

Application Serial No.: 10/783,100
Amdt. dated November 1, 2005
Reply to Office Action of September 8, 2005

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A flexural actuator having an elongated shape, comprising an attachment section for fixation of the flexural actuator and a functional section, extending away from the attachment section, able to be deflected athwart the longitudinal axis thereof by activation of the flexural actuator, such functional section being provided with at least one sensor means suitable for detecting longitudinal stretch, wherein the sensor means is placed at a position, ~~and/or symmetrically on either side of such position~~, at which, when the functional section thrusts against a resistance there is a constant longitudinal stretch independent of the setting force.
2. (Currently Amended) The flexural actuator as set forth in claim 1, wherein the sensor means is placed on ~~one of surfaces~~ a surface of said functional section orientated in the direction of the deflection movement.
3. (Currently Amended) The flexural actuator as set forth in claim 2, comprising a plurality of such sensor means, which are placed in different planes on ~~or in~~ the flexural actuator.
4. (Original) The flexural actuator as set forth in claim 3, wherein on each of the two surfaces, orientated in the direction of the deflection movement, of the functional section in each case at least one sensor means is placed.
5. (Original) The flexural actuator as set forth in claim 1, wherein the sensor means extends continuously over the position of constant longitudinal stretch.

6. (Original) The flexural actuator as set forth in claim 1, wherein the sensor means is interrupted at the position of constant longitudinal stretch.

7. (Original) The flexural actuator as set forth in claim 1, wherein the sensor means is adapted for capacitive measurement.

8. (Original) The flexural actuator as set forth in claim 1, wherein the sensor means is adapted for ohmic measurement.

9. (Original) The flexural actuator as set forth in claim 1, wherein the sensor means is strip-like in its configuration.

10. (Original) The flexural actuator as set forth in claim 1, wherein such sensor means extends along a substantial length along the flexural actuator and for customization resulting from a particular application the position of constant longitudinal stretch may be selectively deactivated.

11. (Original) The flexural actuator as set forth in claim 1, designed in the form of a piezoelectric flexural actuator.

12. (Currently Amended) An actuator means, comprising a flexural actuator which is fixed in place by means of an attachment section on a base, and which comprises a functional section extending away from the attachment section, which functional section is able to be deflected by activation of the flexural actuator athwart the longitudinal axis thereof and may be thrust against a resistance arranged in the deflection path and which is provided with at least one sensor means responsive to the longitudinal stretch, wherein the sensor means is placed at, ~~and/or in the longitudinal direction on either side, of~~ a position, at which with the functional section thrust against the resistance, there is a constant longitudinal stretch independent of the setting force.

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13. (Original) The actuator means as set forth in claim 12, wherein the resistance is constituted by a valve seat provided for a fluid duct.

14. (Original) The actuator means as set forth in claim 12 in the form of a fluid control valve.

15. (Currently Amended) The actuator means as set forth in claim 1, comprising evaluating means responsive to at least one of the deflection and/or and the setting force of the functional section on the basis of the longitudinal stretch found using the sensor means.

16. (Currently Amended) The actuator means as set forth in claim 15, comprising evaluating means for finding at least one of the deflection and/or and the setting force of the functional section on the basis of the longitudinal stretch measured with the sensor means and furthermore comparator means for comparison of the stretch integral round with a predetermined desired value.

17. (Currently Amended) The actuator means as set forth in claim 15, wherein the evaluating means are designed ~~that~~ to separately measure the stretch integrals of the sections, which lie underneath on either side of the position ~~of the position~~ of constant stretch, and to add together ~~and/or or~~ subtract the stretch integrals to and, respectively, from each other.

18. (Currently Amended) The actuator means as set forth in claim 12, ~~comprising such flexural actuator as claimed in claim 2~~ wherein the sensor means is placed on a surface of said functional section oriented in the direction of the deflection movement.

19. (New) The flexural actuator as set forth in claim 1, wherein said sensor means is placed directly over said position.

20. (New) The flexural actuator as set forth in claim 1, wherein said sensor means is placed symmetrically on either side of said position.

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21. (New) A flexural actuator comprising:
an attachment section for fixing the flexural actuator;
a functional section extending away from said attachment section in a longitudinal direction, said functional section being adapted to deflect substantially perpendicular to said longitudinal direction upon application of a setting force to the flexural actuator and having a longitudinal position at which a longitudinal stretch of said functional section remains constant independent of said setting force; and
a sensor disposed at said longitudinal position of said functional section for detecting longitudinal stretch of said functional section.

22. (New) A flexural actuator as defined in Claim 21, wherein said sensor is disposed directly over said longitudinal position.

23. (New) A flexural actuator as defined in Claim 21, wherein said sensor is disposed symmetrically on either side of said longitudinal position.